



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,487	11/10/2000	John Josef Hench	VOY-030	5334
26875 7590 12/14/2009 WOOD, HERRON & EVANS, LLP 2700 CAREW TOWER 441 VINE STREET CINCINNATI, OH 45202				
EXAMINER				
LY, ANH VU H				
ART UNIT		PAPER NUMBER		
2472				
MAIL DATE		DELIVERY MODE		
12/14/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/710,487

Applicant(s)

HENCH ET AL.

Examiner

ANH-VU H. LY

Art Unit

2472

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4, 6-20, 22, 24-31, 33 and 35-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 6-20, 22, 24-31, 33 and 35-44 is/are rejected.
- 7) ☒ Claim(s) 43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This communication is in response to Applicant's amendment filed November 30, 2009. Claims 1-2, 4, 6-20, 22, 24-31, 33, and 35-44 are pending.

Claim Objections

2. Claim 43 is objected to because of the following informalities: in line 1, replace "The method of claim 13" with --The system of claim 13-- since claim 13 recites a system. Further, replace "subjecting the optimizer" with --an optimizer is subjected-- since it is an apparatus claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 42-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 42 and 44, in line 3, "the optimizer" lacks antecedent basis. Further, the limitation "subjecting the optimizer ... combinations thereof" is unclear. Claims 1 and 30 recite optimizing the parameters of the plurality of channels and it is unclear how the step of subjecting the optimizer to at least once constraint has anything to do with the step of optimizing the parameters. There are no associations between the optimized parameters and subjected optimizer.

With respect to claim 43, in line 3, “the optimizer” lacks antecedent basis. Further, the limitation “subjecting the optimizer ... combinations thereof” is unclear. Claim 13 recites an optimization module finds the optimum characterization for at least one channel and it is unclear how the step of subjecting the optimizer to at least once constraint has anything to do with the step of optimizing the parameters. There are no associations between the optimized parameters and subjected optimizer.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-2, 4, 6-20, 22, 24-31, 33, and 35-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Green et al (US Patent No. 6,625,255 B1). Hereinafter, referred to as Green.

With respect to claims 1, 13, 20, and 30, Green discloses a method for the prediction and optimization of a communication system (Figs. 1, 4, and 5) comprising:

inputting data from a plurality of channels into a prediction module of the communications system (Fig. 5, block 512);

predicting a performance of at least one of the plurality of channels using a plurality of parameters to characterize the performance of the at least one of the plurality of channels (Fig. 5, block 506);

creating at least one transform function model of the at least one of the plurality of channels, wherein the at least one transfer function model is simulated using physical configuration information of the communications system (col. 7, lines 56-60, the characterization may also include the development of a transfer function that reflects the results of the field testing of the reference loop and this transfer function may be employed in reference loop simulation); and

optimizing the parameters of at least one of the plurality of channels in order to improve a bit rate of the at least one of the plurality of channels in the communication system (col. 7, line 64 – col. 8, line 9).

With respect to claims 2, 20, and 31, Green discloses that wherein predicting the performance of the at least one of the plurality of channels comprises:

inputting data from at least one channel of the communications system into a prediction module (Fig. 4, block 400);

determining an impairment on the at least one channel (Fig. 4, block 410);

characterization the at last one channel using the at least one transfer function model and the impairment (col. 4, lines 21-25, this characterization may include the development of a transfer function which models the effects, such as attenuation, flat noise, and coupled noise of the reference loop on signals, such as tones, transmitted through it).

With respect to claims 4, 22, and 33, Green discloses that wherein the at least one transfer function model is simulated using a spectrum management system (col. 7, lines 3-5, the

attenuation profile is applied to a loop simulation across a signal frequency range, such as an ADSL signal frequency range. Herein, loop simulation across a signal frequency range is a bandwidth simulation system).

With respect to claims 6, 24, and 35, Green discloses that wherein the impairment is selected from the group consisting of cross-talk impairment, AM radio interference, a temperature impairment, and any combination thereof (col. 7, lines 53-55).

With respect to claims 7 and 36, Green discloses that wherein optimizing the parameters comprises:

- a) choosing a first parameter for the at least one of the plurality of channels (Fig. 4, block 406);
- b) choosing a second parameter for the at least one of the plurality of channels (Fig. 4, block 408);
- c) determining an optimization criteria for the channel based upon the first parameter and second parameter (Fig. 4, block 410);
- d) repeating a) - c) until the optimization criteria is optimized for the communication system (Fig. 4).

With respect to claims 8, 15, 25, and 37, Green discloses that wherein the communications system is a wireline communications system (Fig. 3).

With respect to claims 9, 16, 26, and 38, Green discloses that wherein the communications system is a wireless communications system (col. 1, line 57).

With respect to claims 10, 17, 27, and 39, Green discloses that wherein the communications system is an optical communications system (col. 1, line 58).

With respect to claims 11, 18, 28, and 40, Green discloses that wherein the communications system is a cable communications system (Fig. 3).

With respect to claims 12, 19, 29, and 41, Green discloses that wherein the communications system is a DSL communications system (Fig. 3).

With respect to claim 14, Green discloses that wherein the design criteria are selected from the group consisting of a cost of deployment, a signal to noise ratio, total revenue, bit rate, and any combination thereof (Fig. 4).

Response to Arguments

5. Applicant's arguments filed November 30, 2009 have been fully considered but they are not persuasive.

Applicant argues in page 9 that Green does not optimize any parameters associated with at least one of the plurality of channels in order to improve a bit rate of the At least one of the plurality of channels. Examiner respectfully disagrees. An optimum parameter is an adjusted or

modified parameter to achieve a certain result or output. Green discloses increasing the transmission rate in order to determine types of modems that qualify for transmission up to that rate. Therefore, the adjusted transmission rate is the optimum parameter, as considered by the Examiner.

Applicant argues in page 11 that Green fails to disclose characterizing a channel using a transfer function and impairment. Examiner respectfully disagrees. Green discloses (col. 7, lines 56-60) that the characterization may also include the development of a transfer function that reflects the results of the field testing of the reference loop. Green, further, discloses in Fig. 4, block 410, a determined SNR. Herein, SNR is the impairment and SNR and transfer function are both used in adjusting transmission rate.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANH-VU H. LY whose telephone number is (571)272-3175. The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anh-Vu H Ly/
Primary Examiner, Art Unit 2472